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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/392,264	09/09/1999	TOSHIHARU MORI	018656-085	9910

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EXAMINER

PARKER, KENNETH

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/392,264	<b>Applicant(s)</b> MORI ET AL.	
	<b>Examiner</b> Kenneth A Parker	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2004.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 23-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,8,10-17 and 23-28 is/are rejected.
- 7) ☒ Claim(s) 3,6 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/2/02</u> | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

**I. Claims 1-2, 4-5, 7-8, 10-15-17, 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable Stotts, US patent #3,909113, in view of Hallemeier 5889900 Sugihara EP 0608566, Kyocera JP10104472, Kunikane et al, 5479547 , Furakawa Electric JP0902912, and NT&T JP04069604 and Oki Electric JP 10246825 and Benzoni 5042889.**

Lacking from the primary reference is the clear disclosure of the cholesteric element dividing a waveguide in the waveguide direction. The use of a planar waveguide to support removable elements in the path of a light beam for fiber optic systems was notorsiously well known. All of the secondary references are cited to show this. Specific motivations are shown in the Sugihara reference that indicates that the type of waveguide was conventional (page 2), and that their version offers the benefits of small coupling loss and crosstalk, high positional acururacy, excellent reproducibility and high reliability. The Kyocera reference indicates that the type of holder simplifies axis adjustment of the removable elements and reduces manufacturing costs (abstract).

Therefore it would have been obvious to one of ordinary skill to employ as slot type holder (planar substrate with a groove dividing the layer for insertion of the optical element) as was notoriously well known a method of holding an optical element for low manufacturing cost and simple adjustment, and to use the exact type taught by Sugihara for the benefits of of small coupling loss and crosstalk, high positional acururacy, excellent reproducibility and high reliability.

Also lacking from the primary reference is the cholesteric liquid crystal being a polymer. Polymer liquid crystal were well known for improved stability over non-polymer liquid crystal, and would have been obvious to use for that reason. The secondary reference(s) provide evidence of this assertion. The listed optical elements were well known for providing their particular functions, and would have been obvious for that reason. The use of two LC layer of opposite handedness was well known for enabling both handednesses of light to be used, and would have been obvious for that reason. In accordance with applicant's arguments that a slot is not shown.

***Any assertion that something is well known is a taking of official notice.***

***Note: Any assertions that an element, practice or relationship was conventional has the incorporated motivations of the benefits of having established supply chains, well understood behavior and manufacturing methodologies.***

### ***Response to Arguments***

Applicant is arguing that the IBM reference does not disclose a groove was persuasive, and that reference has been dropped.

Applicant's arguments filed have been fully considered but they are not persuasive.

Regarding the Stotts reference, strong motivations were provided, so motivation to modify was clearly present. Applicants assertion that it does not reflect light of a predetermined frequency is not agreed with, and the light reflected is clearly predetermined by the pitch of the liquid crystal layer.

Several of the references show transparent members where there is a cholesteric liquid crystal in the transparent member. As the transparent member can be used as a waveguide from any direction, the dividing of the wave guide must be met. Further, to clarify the structure, additional secondary references have been cited.

#### ***Allowable Subject Matter***

**Claims 3,6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

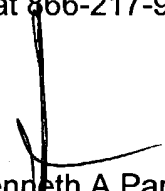
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Parker whose telephone number is 571-272-2298. The examiner can normally be reached on M-F 10:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kenneth A Parker  
Primary Examiner  
Art Unit 2871